Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

U.S. DEPARTMENT OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY
UNITED STATES DEPARTMENT OF AGRICULTURE

U.S. DEPARTMENT OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY

32

235738

LIBRARY
RECEIVED
★ APR 3 1940 ★
U.S. Department of Agriculture

MIMEOGRAPHED ARTICLES
Bureau of Agricultural Chemistry and Engineering
(Formerly Bureau of Chemistry and Soils)

ACE-1	Rosin Straining.	G. P. Shingler
ACE-2	Experimental Turpentine Still for Use in Gum Buying and Experimental Naval Stores Work.	E. L. Patton
ACE-3	Beet Sugar Report (Annual)	E. K. Ventre
	(1) Chemical Studies of Beet Sugars Collected During the 1938 Campaign.	S. Byall
	(2) Report on Biological Studies of Sugars	H. H. Hall
ACE-4	Electricity in the Production of Quality Milk.	H. L. Garver
ACE-5	Grades and Yields of Rosin and Turpentine From Crude Gum.	A. R. Shirley
ACE-6	Rural Electrical Research.	H. L. Garver
ACE-7	How Fires Start and How They Burn.	D. J. Price
ACE-8	Information on Dust Explosions for the Fire Service.	D. J. Price
ACE-9	A Summary Statement of Development, Southern Regional Research Laboratory.	D. F. J. Lynch
ACE-10	The Commercial Production of Prepared Mustard, Table Mustard and Mustard Dressing.	V. A. Pease
ACE-11	Fourth Semi-Annual Naval Stores Report on Production, Distribution and Consumption of Turpentine and Rosin of the United States.	C. F. Speh
ACE-12	Dust Explosion Prevention in Terminal Grain Elevators.	D. J. Price
ACE-13	Explosion and Fire Prevention in School Buildings	D. J. Price
ACE-14	Manufacture of Sweetpotato Starch in the United States.	H. S. Paine F. H. Thurber R. T. Balch W. R. Richie
ACE-15	A Laboratory Study of Soil Reactions on Disks	E. D. Gordon
ACE-16	Use of Power-Driven Soil Resistance Recorder for Study of Compaction of Soils by Tractors.	I. F. Reed

See 1.9 C4929 Ans

ACE-17	The Tillage Machinery Laboratory.	Div.Farm Mech.Equi
ACE-18	Research Work in Wheat Storage.	C. F. Kelly
ACE-19	Report of Research Work in Corn Storage	H. J. Barre
ACE-20	The Grains of Argentina	J.H.Shollenberger
ACE-21	Legume Coverage Studies in Alabama	I. F. Reed
ACE-22	Dust Explosion Prevention in Woodworking Industries	D. J. Price
ACE-23	Information on the Microbiology of Eggs	H. E. Goresline.
ACE-24	What Agricultural Engineers are Contributing to Farm Electrification-Research Results	Harry L. Garver
ACE-25	Dust Explosions Can Occur in Many Plants	David J. Price
ACE-26	Sweetpotatoes as Raw Material	H. S. Paine F. H. Thurber R. T. Balch W. R. Richee
ACE-27	Candle Making	Carbo. Res. Div.
ACE-28	The Use of Refrigeration in Connection with Research in the U. S. Department of Agriculture.	John T. Bowen W. V. Hukill
ACE-29	Progress Report on Farm Operating Efficiency Investigations in Virginia, 1931 - 1938	A. T. Holman J. L. Maxton G. D. Kite
ACE-30	The Utilization of Fruits and Vegetables in the Rio Grande Valley	J. L. Heid

1.932
A2A38
ACE-1

(ACE-1)

LIBRARY
RECEIVED
★ AUG 29 1939 ★
U. S. Department of Agriculture

ROSIN STRAINING

By

G. P. Shingler, Senior Chemist and E. L. Patton Associate
Chemical Engineer, Naval Stores Station, Bureau of Agricultural
Chemistry and Engineering, U. S. Department of Agriculture

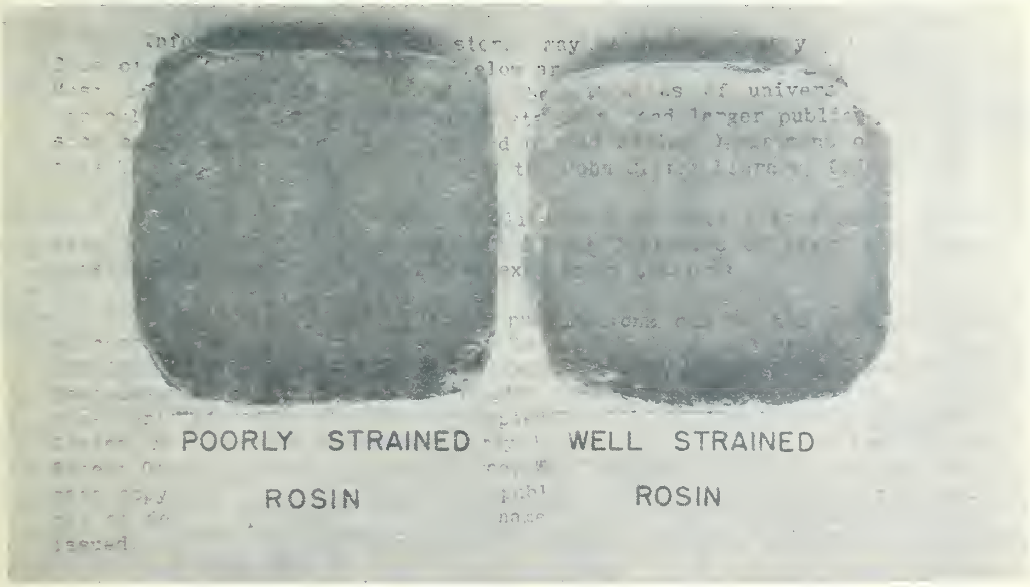
[1939]

* * * * *

Clean rosin is preferred by practically every rosin consuming industry and is quite essential in making varnishes, plastics, core oils, and related products.

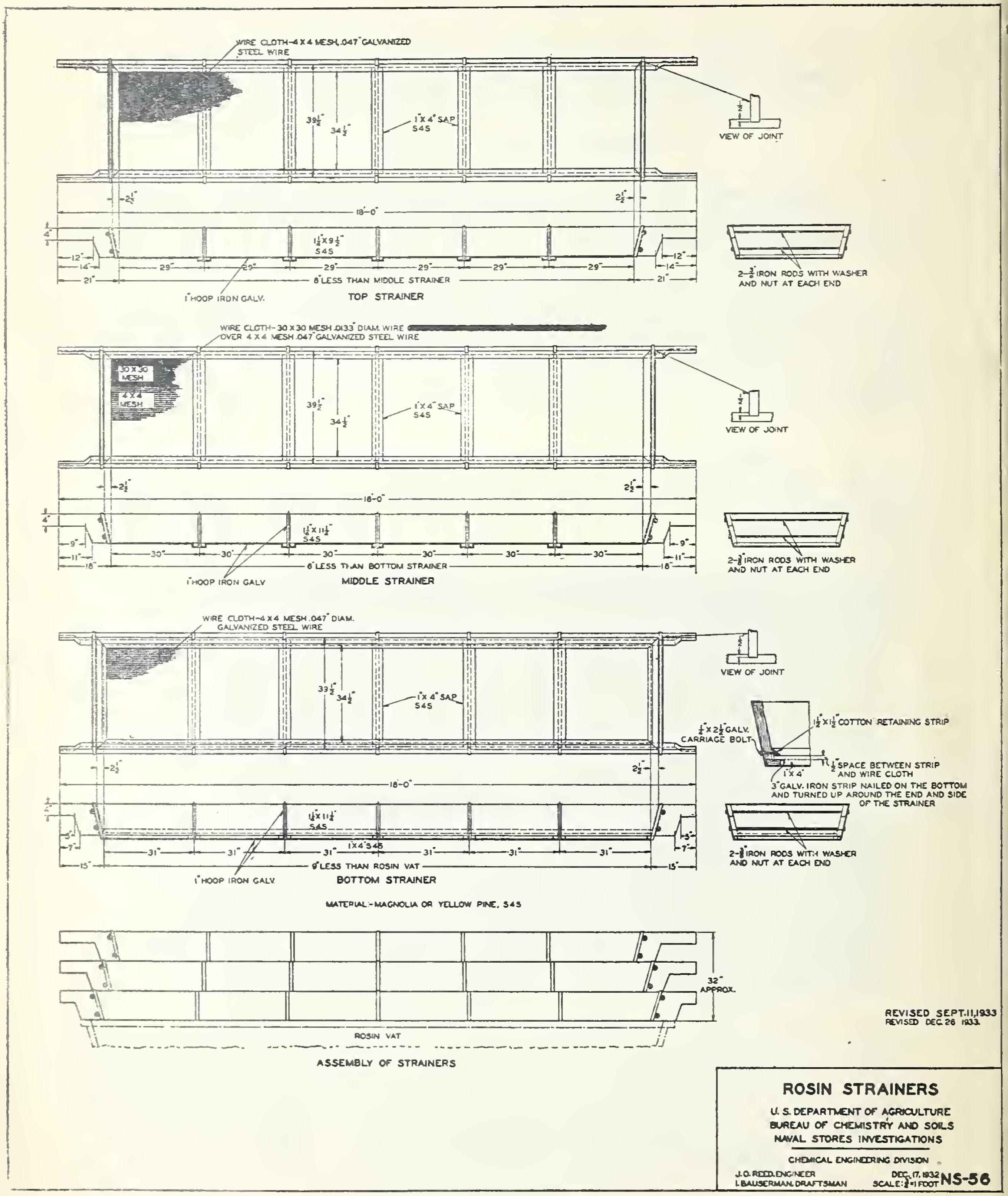
The Commodity Credit Corporation, recognizing these manufacturing requirements, has incorporated in its agreement "that only gum rosin, which has been carefully and adequately strained and is more or less clear and transparent or translucent and free of an excess amount of visible extraneous foreign material shall be eligible for advances hereunder."

The Naval Stores Station through experiments with rosin straining has found that there is really a difference between truly clean rosin and an average commercial rosin. This is shown in the following photograph:



As an arbitrary standard, if clear glass is taken as 100 per cent clean, the above filtered rosin, produced by filtering the gum before distillation, would be 97 per cent and the poorly strained rosin would be 52 per cent. A well strained rosin made on a fire still should by this standard have a cleanliness of approximately 80. There should be no specks or particles visible to the naked eye.

The construction of the strainers is best described by the following line print:


WIRE CLOTH-4 X 4 MESH .047" GALVANIZED STEEL WIRE
39 1/2"
34 1/2"
1" X 4" SAP S4S
VIEW OF JOINT
1/2
2 1/2"
18'-0"
4"
1 1/4" X 9 1/2" S4S
12"
14"
21"
29"
8" LESS THAN MIDDLE STRAINER
2-3/8" IRON RODS WITH WASHER AND NUT AT EACH END
1" HOOP IRON GALV.
TOP STRAINER
WIRE CLOTH-30 X 30 MESH .0133" DIAM. WIRE [redacted]
OVER 4 X 4 MESH .047" GALVANIZED STEEL WIRE
30 X 30 MESH
4 X 4 MESH
39 1/2"
34 1/2"
1" X 4" SAP S4S
VIEW OF JOINT
3/4
2 1/2"
18'-0"
4"
1 1/4" X 11 1/2" S4S
9"
11"
18"
30"
8" LESS THAN BOTTOM STRAINER
2-3/8" IRON RODS WITH WASHER AND NUT AT EACH END
1" HOOP IRON GALV.
MIDDLE STRAINER
WIRE CLOTH-4 X 4 MESH .047" DIAM. GALVANIZED STEEL WIRE
39 1/2"
34 1/2"
1" X 4" SAP S4S
VIEW OF JOINT
1/2
1 1/2" X 1 1/2" COTTON RETAINING STRIP
1/2" X 2 1/2" GALV. CARRIAGE BOLT
1/2" SPACE BETWEEN STRIP AND WIRE CLOTH
1" X 4"
3" GALV. IRON STRIP NAILED ON THE BOTTOM AND TURNED UP AROUND THE END AND SIDE OF THE STRAINER
2 1/2"
18'-0"
1 1/4" X 11 1/2" S4S
1" X 4" S4S
3"
7"
15"
31"
9" LESS THAN ROSIN VAT
2-3/8" IRON RODS WITH WASHER AND NUT AT EACH END
1" HOOP IRON GALV.
BOTTOM STRAINER
32" APPROX.
ROSIN VAT
ASSEMBLY OF STRAINERS

MATERIAL:-MAGNOLIA OR YELLOW PINE, S4S

REVISED SEPT. 11, 1933
REVISED DEC. 26 1933.

ROSIN STRAINERS

U. S. DEPARTMENT OF AGRICULTURE
BUREAU OF CHEMISTRY AND SOILS
NAVAL STORES INVESTIGATIONS

CHEMICAL ENGINEERING DIVISION

J. O. REED, ENGINEER
I. BAUSERMAN, DRAFTSMAN

DEC. 17, 1932
SCALE: 3/8"=1 FOOT
NS-56

The top strainer or chip catcher, may be only about one-half or two-thirds as long as the other two strainers. A 4-mesh galvanized wire is used on it. The second, or rock dross strainer, has a 30-mesh steel wire supported by a 4-mesh galvanized wire. The diameter of the fine wire is about 0.013 inch. The third or batting dross strainer has a 4-mesh galvanized wire. The important feature in the construction of the batting strainer is the three-quartered strip of wood or quarter round, nailed around on the inside about one-half inch above the wire. The purpose of this strip is to hold the cotton batting, when tucked under it, so the rosin cannot run around the cotton.

Following are some "DON'TS":

DON'T whip the second strainer between charges unless there is a vast difference in grades of gum being run from charge to charge.

DON'T expect a "cold charge" to strain.

DON'T turn out below 315°F.

DON'T break the cotton with a paddle in order to get the rosin through.

DON'T scrape the rock dross up with a scrape iron; use a wooden paddle.

DON'T use strainers with holes in the wire or a poor strain will result.

Cotton batting, which is made of cotton linters treated on one side with a rosin and glue size to render it impervious to the dirt and sand which passes through the wire screens, is spread the entire length of the bottom strainer. The top side of the cotton batting, which is untreated, collects in the form of a "matte" the fine, particles of rosin coated dirt and rosin, making what is known as "batting dross."

While in numbers of cases one layer may be sufficient, the Naval Stores Station recommends the use of an extra one-half length of cotton batting laid over the first length toward the end of the bottom strainer next to the still tail pipe. This practice has been thoroughly tested with numbers of charges run at the Station and in the field and has been found to give equally as good results as a full length layer or two or more layers laid over it or on other strainers in the make up of three or four strainer systems.